

THE ASTROPHYSICAL JOURNAL  
CONTENTS OF VOLUME 532, PART 1

2000 MARCH 20, NUMBER 1

	<i>Page</i>
CONSTRAINING PRIMORDIAL NON-GAUSSIANITY WITH THE ABUNDANCE OF HIGH-REDSHIFT CLUSTERS <i>James Robinson, Eric Gawiser, &amp; Joseph Silk</i>	1
HEATING OF INTERGALACTIC GAS AND CLUSTER SCALING RELATIONS <i>Michael Loewenstein</i>	17
COSMOLOGICAL CONSTANT OR INTERGALACTIC DUST? CONSTRAINTS FROM THE COSMIC FAR-INFRARED BACKGROUND <i>Anthony Aguirre &amp; Zoltan Haiman</i>	28
A MEASUREMENT OF ANISOTROPY IN THE COSMIC MICROWAVE BACKGROUND ON 7'-22' SCALES <i>E. M. Leitch, A. C. S. Readhead, T. J. Pearson, S. T. Myers, S. Gulkis, &amp; C. R. Lawrence</i>	37
NEW COSMIC MICROWAVE BACKGROUND POWER SPECTRUM CONSTRAINTS FROM MSAMI <i>G. W. Wilson, L. Knox, S. Dodelson, K. Coble, E. S. Cheng, D. A. Cottingham, D. J. Fixsen, A. B. Goldin, C. A. Inman, M. S. Kowitt, S. S. Meyer, L. A. Page, J. L. Puchaila, J. E. Ruhl, &amp; R. F. Silverberg</i>	57
Si AND Mn ABUNDANCES IN DAMPED Ly $\alpha$ SYSTEMS WITH LOW DUST CONTENT <i>Max Pettini, Sara L. Ellison, Charles C. Steidel, Alice E. Shapley, &amp; David V. Bowen</i>	65
EVIDENCE FOR LARGE-SCALE STRUCTURE IN THE Ly $\alpha$ FOREST AT $z > 2.6$ <i>G. M. Williger, A. Smette, C. Hazard, J. A. Baldwin, &amp; R. G. McMahon</i>	77
HUBBLE SPACE TELESCOPE WEAK-LENSING STUDY OF THE $z = 0.83$ CLUSTER MS 1054-03 <i>H. Hoekstra, M. Franx, &amp; K. Kuijken</i>	88
SUPERNOVA Ia CONSTRAINTS ON A TIME-VARIABLE COSMOLOGICAL "CONSTANT" <i>Silviu Podariu &amp; Bharat Ratna</i>	109
HYDRODYNAMICAL SIMULATIONS OF THE Ly $\alpha$ FOREST: MODEL COMPARISONS <i>Marie E. Machacek, Greg L. Bryan, Avery Meiksin, Peter Anninos, Daniel Thayer, Michael Norman, &amp; Yu Zhang</i>	118
LONG-TERM SPECTROSCOPIC MONITORING OF LOW-REDSHIFT QUASARS. I. 5 YEAR REPORT <i>Michael R. Corbin &amp; Paul S. Smith</i>	136
DETECTION OF WARM AND COLD PHASES OF THE NEUTRAL ISM IN A DAMPED Ly $\alpha$ ABSORBER <i>W. M. Lane, F. H. Briggs, &amp; A. Smette</i>	146
PROTOGALACTIC STARBURSTS AT HIGH REDSHIFT <i>Raul Jimenez, Paolo Padoan, James S. Dunlop, David V. Bowen, Mika Juvela, &amp; Francesca Matteucci</i>	152
Ly $\alpha$ IMAGING OF A PROTO-CLUSTER REGION AT $\langle z \rangle = 3.09$ <i>Charles C. Steidel, Kurt L. Adelberger, Alice E. Shapley, Max Pettini, Mark Dickinson, &amp; Mauro Giavalisco</i>	170
OFF-CENTER MERGERS OF CLUSTERS OF GALAXIES AND NONEQUIPARTITION OF ELECTRONS AND IONS IN THE INTRACLUSTER MEDIUM <i>Motokazu Takizawa</i>	183
PROBING THE EVOLUTION OF EARLY-TYPE CLUSTER GALAXIES THROUGH CHEMICAL ENRICHMENT <i>Ignacio Ferreras &amp; Joseph Silk</i>	193
DECONSTRUCTING ABELL 3266: A MAJOR MERGER IN A QUIET CLUSTER <i>R. A. Flores, H. Quintana, &amp; M. J. Way</i>	206
ON THE ORIGIN OF THE TULLY-FISHER RELATION <i>Jin Koda, Yoshiaki Sofue, &amp; Keiichi Wada</i>	214
MOLECULAR GAS, DUST, AND STAR FORMATION IN THE BARRED SPIRAL NGC 5383 <i>Kartik Sheth, Michael W. Regan, Stuart N. Vogel, &amp; Peter J. Teuben</i>	221

	Page
ON THE IONIZING CONTINUUM IN ACTIVE GALACTIC NUCLEI: CLUES FROM THE INFRARED SPACE OBSERVATORY <i>M. Almodena Prieto &amp; Sueli M. Viegas</i>	238
RESOLVED SPECTROSCOPY OF THE NARROW-LINE REGION IN NGC 1068. I. THE NATURE OF THE CONTINUUM EMISSION <i>D. Michael Crenshaw &amp; Steven B. Kraemer</i>	247
RESOLVED SPECTROSCOPY OF THE NARROW-LINE REGION IN NGC 1068. II. PHYSICAL CONDITIONS NEAR THE NGC 1068 "HOT SPOT" <i>Steven B. Kraemer &amp; D. Michael Crenshaw</i>	256
SIMULATIONS OF GAMMA-RAY BURSTS FROM COOLING RELATIVISTIC ELECTRONS <i>Jiancheng Wang, Xuefen Cen, Tongling Qian, Jun Xu, &amp; Chongyun Wang</i>	267
GAMMA-RAY BURSTS IN MOLECULAR CLOUDS: H <sub>2</sub> ABSORPTION AND FLUORESCENCE <i>B. T. Draine</i>	273
EARLY GAMMA-RAY BURST AFTERGLOWS FROM RELATIVISTIC BLAST WAVES IN GENERAL RADIATIVE REGIMES <i>Markus Böttcher &amp; Charles D. Dermer</i>	281
SOME OBSERVATIONAL CONSEQUENCES OF GAMMA-RAY BURST SHOCK MODELS <i>Pawan Kumar &amp; Tsvi Piran</i>	286
ORBITAL DEFORMATION OF SATELLITES BY DYNAMICAL FRICTION IN SPHERICAL HALOS WITH ANISOTROPIC VELOCITY DISPERSION <i>Toshio Tsuchiya &amp; Masaaki Shimada</i>	294
DETECTION OF MULTI-TeV GAMMA RAYS FROM MARKARIAN 501 DURING AN UNFORESEEN FLARING STATE IN 1997 WITH THE TIBET AIR SHOWER ARRAY <i>M. Amenomori, S. Ayabe, P. Y. Cao, Danzengluobu, L. K. Ding, Z. Y. Feng, Y. Fu, H. W. Guo, M. He, K. Hibino, N. Hotta, Q. Huang, A. X. Huo, K. Izu, H. Y. Jia, F. Kajino, K. Kasahara, Y. Katayose, Labaciren, J. Y. Li, H. Lu, S. L. Lu, G. X. Luo, X. R. Meng, K. Mizutani, J. Mu, H. Nanjo, M. Nishizawa, M. Ohnishi, I. Ohta, T. Ouchi, J. R. Ren, T. Saito, M. Sakata, T. Sasaki, Z. Z. Shi, M. Shibata, A. Shiomi, T. Shirai, H. Sugimoto, K. Taira, Y. H. Tan, N. Tateyama, S. Torii, T. Utsugi, C. R. Wang, H. Wang, X. W. Xu, Y. Yamamoto, G. C. Yu, A. F. Yuan, T. Yuda, C. S. Zhang, H. M. Zhang, J. L. Zhang, N. J. Zhang, X. Y. Zhang, Zhaxisangzhu, Zhaxiciren, &amp; W. D. Zhou (The Tibet AS<math>\gamma</math> Collaboration)</i>	302
DETECTION AND PHOTOMETRY OF HOT HORIZONTAL BRANCH STARS IN THE CORE OF M32 <i>Thomas M. Brown, Charles W. Bowers, Randy A. Kimble, Allen V. Sweigart, &amp; Henry C. Ferguson</i>	308
THE NARROW-LINE REGIONS OF LINERs AS RESOLVED WITH THE HUBBLE SPACE TELESCOPE <i>Richard W. Pogge, Dan Maoz, Luis C. Ho, &amp; Michael Eracleous</i>	323
COMBINED ANALYSIS OF THE BINARY LENS CAUSTIC-CROSSING EVENT MACHO 98-SMC-1 <i>C. Afonso, C. Alard, J. N. Albert, J. Andersen, R. Ansari, É. Aubourg, P. Bareyre, F. Bauer, J. P. Beaulieu, A. Bouquet, S. Char, C. Charlot, F. Couchot, C. Coutures, F. Derue, R. Ferlet, J. F. Glicenstein, B. Goldman, A. Gould, D. Graff, M. Gros, J. Haissinski, J. C. Hamilton, D. Hardin, J. de Kat, A. Kim, T. Lasserre, É. Lesquoy, C. Loup, C. Magneville, J. B. Marquette, É. Maurice, A. Milsztajn, M. Moniez, N. Palanque-Delabrouille, O. Perdureau, L. Prévot, N. Regnault, J. Rich, M. Spiro, A. Vidal-Madjar, L. Vigroux, &amp; S. Zylberajch (The EROS Collaboration), C. Alcock, R. A. Allsman, D. Alves, T. S. Axelrod, A. C. Becker, K. H. Cook, A. J. Drake, K. C. Freeman, K. Griest, L. J. King, M. J. Lehner, S. L. Marshall, D. Minniti, B. A. Peterson, M. R. Pratt, P. J. Quinn, A. W. Rodgers, P. B. Stetson, C. W. Stubbs, W. Sutherland, A. Tomaney, &amp; T. Vandehei (The MACHO/GMAN Collaboration), S. H. Rhie, D. P. Bennett, P. C. Fragile, B. R. Johnson, &amp; J. Quinn (The MPS Collaboration), A. Udalski, M. Kubiak, M. Szymański, G. Pietrzyński, P. Woźniak, &amp; K. Zebruń (The OGLE Collaboration), M. D. Albrow, J. A. R. Caldwell, D. L. DePoy, M. Dominik, B. S. Gaudi, J. Greenhill, K. Hill, S. Kane, R. Martin, J. Menzies, R. M. Naber, R. W. Pogge, K. R. Pollard, P. D. Sackett, K. C. Sahu, P. Vermaak, R. Watson, &amp; A. Williams (The PLANET Collaboration)</i>	340
ON THE EFFECTS OF PROJECTION ON MORPHOLOGY <i>Bárbara Pichardo, Enrique Vázquez-Semadeni, Adriana Gazol, Thierry Passot, &amp; Javier Ballesteros-Paredes</i>	353
FRAGMENTATION INSTABILITY OF MOLECULAR CLOUDS: NUMERICAL SIMULATIONS <i>Rémy Indebetouw &amp; Ellen G. Zweibel</i>	361
THE CF RADICAL: TERAHERTZ SPECTRUM AND DETECTABILITY IN SPACE <i>Isamu Morino, Koichi M. T. Yamada, Sergei P. Belov, Gisbert Winnewisser, &amp; Eric Herbst</i>	377
PROPERTIES OF DUST GRAINS IN PLANETARY NEBULAE. I. THE IONIZED REGION OF NGC 6445 <i>Peter A. M. van Hoof, Griet C. Van de Steene, Douwe A. Beintema, P. G. Martin, Stuart R. Pottasch, &amp; Gary J. Ferland</i>	384
MODELING NONAXISYMMETRIC BOW SHOCKS: SOLUTION METHOD AND EXACT ANALYTICAL SOLUTIONS <i>Francis P. Wilkin</i>	400
CAN LIGHT ECHOES ACCOUNT FOR THE SLOW DECAY OF TYPE II <sub>in</sub> SUPERNOVAE? <i>Bruce Roscherr &amp; Bradley E. Schaefer</i>	415

# CONTENTS

v

DISCOVERY OF YOUNG STELLAR OBJECTS AT THE EDGE OF THE OPTICAL DISK OF OUR GALAXY <i>Naoto Kobayashi &amp; Alan T. Tokunaga</i>	Page 423
MODELS FOR OLD, METAL-POOR STARS WITH ENHANCED $\alpha$ -ELEMENT ABUNDANCES. I. EVOLUTIONARY TRACKS AND ZAHB LOCI; OBSERVATIONAL CONSTRAINTS <i>Don A. Vandenberg, Fritz J. Swenson, Forrest J. Rogers, Carlos A. Iglesias, &amp; David R. Alexander</i>	430
NEAR-INFRARED SPECTRAL FEATURES IN SINGLE-AGED STELLAR POPULATIONS <i>R. P. Schiavon, B. Barbuy, &amp; G. Bruzual A.</i>	453
OPTICAL IDENTIFICATION OF FAINT X-RAY SOURCES IN THE CORE OF $\omega$ CENTAURI <i>Jennifer E. Carson, Adrienne M. Cool, &amp; Jonathan E. Grindlay</i>	461
INTERFEROMETRIC OBSERVATION OF IRC +10011 AND IRC +10420 IN THE MID-INFRARED <i>E. A. Lipman, D. D. S. Hale, J. D. Monnier, P. G. Tuthill, W. C. Danchi, &amp; C. H. Townes</i>	467
ACCRETION-INDUCED LITHIUM LINE ENHANCEMENTS IN CLASSICAL T TAURI STARS: RW AURIGAE <i>N. M. Stout-Batalha, C. C. Batalha, &amp; G. S. Basri</i>	474
BETELGEUSE AND ITS VARIATIONS <i>David F. Gray</i>	487
HST/STIS ECHELLE SPECTRA OF THE dM1e STAR AU MICROSCOPII OUTSIDE OF FLARES <i>Isabella Pagano, Jeffrey L. Linsky, Lee Carkner, Richard D. Robinson, Bruce Woodgate, &amp; Gethyn Timothy</i>	497
FLUX EXPULSION AND FIELD EVOLUTION IN NEUTRON STARS <i>M. Jahan-Miri</i>	514
TIDAL INTERACTION BETWEEN A FLUID STAR AND A KERR BLACK HOLE IN CIRCULAR ORBIT <i>Paul Wiggins &amp; Dong Lai</i>	530
BLACK HOLE FORMATION VIA HYPERCRITICAL ACCRETION DURING COMMON-ENVELOPE EVOLUTION <i>Philip J. Armitage &amp; Mario Livio</i>	540
SIMULTANEOUS OBSERVATIONS OF GRS 1758-258 IN 1997 BY VLA, IRAM, SEST, RXTE, AND OSSE: SPECTROSCOPY AND TIMING <i>D. Lin, I. A. Smith, E. P. Liang, T. Bridgman, D. M. Smith, J. Martí, Ph. Durouchoux, I. F. Mirabel, &amp; L. F. Rodríguez</i>	548
HYDRODYNAMIC MODELS OF LINE-DRIVEN ACCRETION DISK WINDS. II. ADIABATIC WINDS FROM NONISOTHERMAL DISKS <i>Nicolas Antonio Pereyra, Timothy R. Kallman, &amp; John M. Blondin</i>	563
THE BIG OCCULTING STEERABLE SATELLITE (BOSS) <i>Craig J. Copi &amp; Glenn D. Starkman</i>	581
THREE-DIMENSIONAL SPHERICAL SIMULATIONS OF SOLAR CONVECTION. I. DIFFERENTIAL ROTATION AND PATTERN EVOLUTION ACHIEVED WITH LAMINAR AND TURBULENT STATES <i>Mark S. Miesch, Julian R. Elliott, Juri Toomre, Tom L. Clune, Gary A. Glatzmaier, &amp; Peter A. Gilman</i>	593
ARE ELECTRIC CURRENTS IN SOLAR ACTIVE REGIONS NEUTRALIZED? <i>M. S. Wheatland</i>	616
A STUDY OF SUNSPOTS WITH PHASE TIME AND TRAVEL TIME OF $p$ -MODE WAVES IN ACOUSTIC IMAGING <i>Dean-Yi Chou, Ming-Tsung Sun, &amp; Hsiang-Kuang Chang</i>	622
YOHKOH SXT AND SOHO EIT OBSERVATIONS OF SIGMOID-TO-ARCADE EVOLUTION OF STRUCTURES ASSOCIATED WITH HALO CORONAL MASS EJECTIONS <i>Alphonse C. Sterling, Hugh S. Hudson, Barbara J. Thompson, &amp; Dominic M. Zarro</i>	628
A NEW LIMIT ON THE ANTIPROTON LIFETIME <i>Stephen H. Geer &amp; Dallas C. Kennedy</i>	648
THE COSMIC-RAY ELECTRON AND POSITRON SPECTRA MEASURED AT 1 AU DURING SOLAR MINIMUM ACTIVITY <i>M. Boezio, P. Carlson, T. Francke, N. Weber, M. Suffert, M. Hof, W. Menn, M. Simon, S. A. Stephens, R. Bellotti, F. Cafagna, M. Castellano, M. Circella, C. De Marzo, N. Finetti, P. Papini, S. Piccardi, P. Spillantini, M. Ricci, M. Casolini, M. P. De Pascale, A. Morselli, P. Picozza, R. Sparvoli, G. Barbiellini, U. Bravar, P. Schiavon, A. Vacchi, N. Zampa, C. Grimani, J. W. Mitchell, J. F. Ormes, R. E. Streitmatter, R. L. Golden, &amp; S. J. Stochaj</i>	653
SIMPLE EXPRESSION OF OCCUPATION PROBABILITY IN THE "CHEMICAL PICTURE" <i>Takeshi Nishikawa</i>	670
ABSTRACTS OF THE ASTROPHYSICAL JOURNAL SUPPLEMENT SERIES, 2000 APRIL	
SELECTED PAPERS TO BE INCLUDED IN THE PUBLISHED PROCEEDINGS OF THE SECOND INTERNATIONAL WORKSHOP ON LABORATORY ASTROPHYSICS WITH INTENSE LASERS	673

2000 APRIL 1, NUMBER 2

	Page
GRAVITATIONAL LENSING OF DISTANT SUPERNOVAE IN COLD DARK MATTER UNIVERSES <i>Cristiano Porciani &amp; Piero Madau</i>	679
THE CLUSTER M-T RELATION FROM TEMPERATURE PROFILES OBSERVED WITH ASCA AND ROSAT <i>J. Nevalainen, M. Markevitch, &amp; W. Forman</i>	694
OPTICAL IDENTIFICATION OF THE ASCA LARGE SKY SURVEY <i>Masayuki Akiyama, Kouji Ohta, Toru Yamada, Nobunari Kashikawa, Masafumi Yagi, Wataru Kawasaki, Masaaki Sakano, Takeshi Tsuru, Yoshihiro Ueda, Tadayuki Takahashi, Ingo Lehmann, Günther Hasinger, &amp; Wolfgang Voges</i>	700
VIRIALIZATION OF GALAXY CLUSTERS AND BEYOND <i>Wen Xu, Li-Zhi Fang, &amp; Xiang-Ping Wu</i>	728
THE HUBBLE SPACE TELESCOPE SURVEY OF BL LACERTAE OBJECTS. I. SURFACE BRIGHTNESS PROFILES, MAGNITUDES, AND RADII OF HOST GALAXIES <i>Riccardo Scarpa, C. Megan Urry, Renato Falomo, Joseph E. Pesce, &amp; Aldo Treves</i>	740
THE HUBBLE SPACE TELESCOPE SURVEY OF BL LACERTAE OBJECTS. II. HOST GALAXIES <i>C. Megan Urry, Riccardo Scarpa, Matthew O'Dowd, Renato Falomo, Joseph E. Pesce, &amp; Aldo Treves</i>	816
MID-ULTRAVIOLET DETERMINATION OF ELLIPTICAL GALAXY ABUNDANCES AND AGES <i>Jennifer M. Lotz, Henry C. Ferguson, &amp; Ralph C. Bohlin</i>	830
EXTREME STAR FORMATION IN THE INTERACTING GALAXY ARP 299 (IC 694 + NGC 3690) <i>Almudena Alonso-Herrero, George H. Rieke, Marcia J. Rieke, &amp; Nick Z. Scoville</i>	845
THE EXTENDED NARROW-LINE REGION OF THE SEYFERT 1 GALAXY ESO 362-G18 VERSUS THAT OF THE SEYFERT 2 GALAXY ESO 362-G8 <i>Henrique A. Fraquelli, Thaisa Storchi-Bergmann, &amp; Luc Binette</i>	867
HUBBLE SPACE TELESCOPE OBSERVATIONS AND PHOTOIONIZATION MODELING OF THE LINER GALAXY NGC 1052 <i>J. R. Gabel, F. C. Bruhweiler, D. M. Crenshaw, S. B. Kraemer, &amp; C. L. Miskey</i>	883
A STATIONARY CORE WITH A ONE-SIDED JET IN THE CENTER OF M81 <i>M. F. Bietenholz, N. Bartel, &amp; M. P. Rupen</i>	895
SUBMILLIMETER OBSERVATIONS OF IC 10: THE DUST PROPERTIES AND NEUTRAL CARBON CONTENT OF A LOW-METALLICITY STARBURST <i>Alberto D. Bolatto, James M. Jackson, Christine D. Wilson, &amp; Gerald Moriarty-Schieven</i>	909
EFFECT OF THE MILKY WAY ON MAGELLANIC CLOUD STRUCTURE <i>Martin D. Weinberg</i>	922
SELECTION OF NEARBY MICROLENSING CANDIDATES FOR OBSERVATION BY THE SPACE INTERFEROMETRY MISSION <i>Andrew Gould</i>	936
OBSERVATIONAL EVIDENCE OF SUPERSHELL BLOWOUT IN GS 018-04+44: THE SCUTUM SUPERSHELL <i>Matthew B. Callaway, Blair D. Savage, Robert A. Benjamin, L. Matthew Haffner, &amp; Steve L. Tufte</i>	943
THE X-RAY LINE EMISSION FROM THE SUPERNOVA REMNANT W49B <i>Una Hwang, Robert Petre, &amp; John P. Hughes</i>	970
MOLECULAR CLOUD FORMATION IN SHOCK-COMPRESSED LAYERS <i>Hiroshi Koyama &amp; Shu-Ichiro Inutsuka</i>	980
A CHEMICAL MODEL OF THE NEUTRAL ENVELOPE OF THE PLANETARY NEBULA NGC 7027 <i>Tatsuhiko I. Hasegawa, Kevin Volk, &amp; Sun Kwok</i>	994
CIRCUMSTELLAR GAS, DUST EMISSION, AND MASS LOSS FROM EVOLVED CARBON STARS <i>David Hiriart &amp; John Kwan</i>	1006
THE SIZE DISTRIBUTION OF DUST TOWARD HD 210121 AS DETERMINED FROM EXTINCTION <i>K. A. Larson, M. J. Wolff, W. G. Roberge, D. C. B. Whittet, &amp; L. He</i>	1021
STUDY OF THE REACTIONS OF H AND D ATOMS WITH SOLID C <sub>2</sub> H <sub>2</sub> , C <sub>2</sub> H <sub>4</sub> , AND C <sub>2</sub> H <sub>6</sub> AT CRYOGENIC TEMPERATURES <i>Kenzo Hiraoka, Toshikazu Takayama, Atsuko Euichi, Hiroko Handa, &amp; Tetsuya Sato</i>	1029
DENSE CORES OF DARK CLOUDS. XII. <sup>13</sup> CO AND C <sup>18</sup> O IN LUPUS, CORONA AUSTRALIS, VELA, AND SCORPIUS <i>J. W. S. Vilas-Boas, P. C. Myers, &amp; G. A. Fuller</i>	1038

# CONTENTS

vii

SELF-GRAVITATING GASEOUS BARS. I. COMPRESSIBLE ANALOGS OF RIEMANN ELLIPSOIDS WITH SUPERSONIC INTERNAL FLOWS <i>John E. Cazes &amp; Joel E. Tohline</i>	Page 1051
OPTICAL LIGHT CURVES OF THE BLACK HOLE BINARIES GRS 1124-68 AND A0620-00 IN OUTBURST: THE IMPORTANCE OF IRRADIATION <i>Ann A. Esin, Erik Kuulkers, Jeffrey E. McClintock, &amp; Ramesh Narayan</i>	1069
THE EXTENT AND CAUSE OF THE PRE-WHITE DWARF INSTABILITY STRIP <i>M. S. O'Brien</i>	1078
QUASI-PERIODIC X-RAY FLARES FROM THE PROTOSTAR YLW 15 <i>Yohko Tsuboi, Kensuke Imanishi, Katsuji Koyama, Nicolas Grosso, &amp; Thierry Montmerle</i>	1089
ROTATION AND X-RAY EMISSION FROM PROTOSTARS <i>Thierry Montmerle, Nicolas Grosso, Yohko Tsuboi, &amp; Katsuji Koyama</i>	1097
LARGE X-RAY FLARE FROM THE HERBIG Be STAR MWC 297 <i>Kenji Hamaguchi, Hiroshi Terada, Aya Bamba, &amp; Katsuji Koyama</i>	1111
X1908+075: AN X-RAY BINARY WITH A 4.4 DAY PERIOD <i>Linqing Wen, Ronald A. Remillard, &amp; Hale V. Bradt</i>	1119
RADIO OBSERVATIONS OF SN 1979C: EVIDENCE FOR RAPID PRESUPERNOVA EVOLUTION <i>Marcos J. Montes, Kurt W. Weiler, Schuyler D. Van Dyk, Nino Panagia, Christina K. Lacey, Richard A. Sramek, &amp; Richard Park</i>	1124
RADIATION HYDRODYNAMICS OF SN 1987A. I. GLOBAL ANALYSIS OF THE LIGHT CURVE FOR THE FIRST 4 MONTHS <i>Sergei Blinnikov, Peter Lundqvist, Oleg Bartunov, Ken'ichi Nomoto, &amp; Koichi Iwamoto</i>	1132
FULL POLAR CAP CASCADE SCENARIO: GAMMA-RAY AND X-RAY LUMINOSITIES FROM SPIN-POWERED PULSARS <i>Bing Zhang &amp; Alice K. Harding</i>	1150
ON THE DECELERATING SHOCK INSTABILITY OF A PLANE-PARALLEL SLAB WITH FINITE THICKNESS <i>Ryoichi Nishi &amp; Hideyuki Kamaya</i>	1172
IDENTIFICATION OF A LIKELY RADIO COUNTERPART TO THE RAPID BURSTER <i>Christopher B. Moore, Robert E. Rutledge, Derek W. Fox, Robert A. Guerriero, Walter H. G. Lewin, Robert Fender, &amp; Jan van Paradijs</i>	1181
DISTANCE DEPENDENCE IN THE SOLAR NEIGHBORHOOD AGE-METALLICITY RELATION <i>D. R. Garnett &amp; H. A. Kobulnicky</i>	1192
ION CYCLOTRON WAVE DISSIPATION IN THE SOLAR CORONA: THE SUMMED EFFECT OF MORE THAN 2000 ION SPECIES <i>Steven R. Cranmer</i>	1197
FLARE FREQUENCY-SIZE DISTRIBUTIONS FOR INDIVIDUAL ACTIVE REGIONS <i>M. S. Wheatland</i>	1209
PHYSICAL PROPERTIES OF THE SOLAR MAGNETIC PHOTOSPHERE UNDER THE MISMA HYPOTHESIS. II. NETWORK AND INTERNETWORK FIELDS AT THE DISK CENTER <i>J. Sánchez Almeida &amp; B. W. Lites</i>	1215
NUMERICAL MODELING OF THE ABSORPTION AND SCATTERING OF ACOUSTIC RADIATION BY SUNSPOTS <i>C. S. Rosenthal &amp; K. A. Julien</i>	1230
RADIO ASTRONOMICAL POLARIMETRY AND THE LORENTZ GROUP <i>M. C. Britton</i>	1240
ERRATUM	
LABORATORY MEASUREMENTS AND MODELING OF THE Fe XVII X-RAY SPECTRUM <i>G. V. Brown, P. Beiersdorfer, D. A. Liedahl, K. Widmann, &amp; S. M. Kahn</i>	1245
INSTRUCTIONS TO AUTHORS	i





